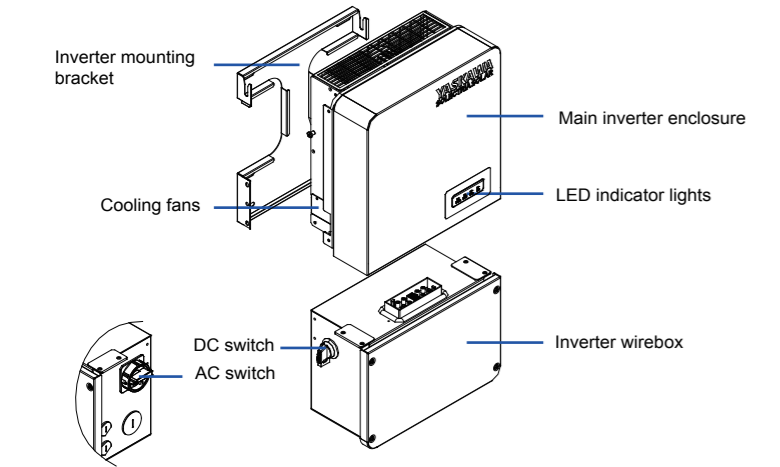


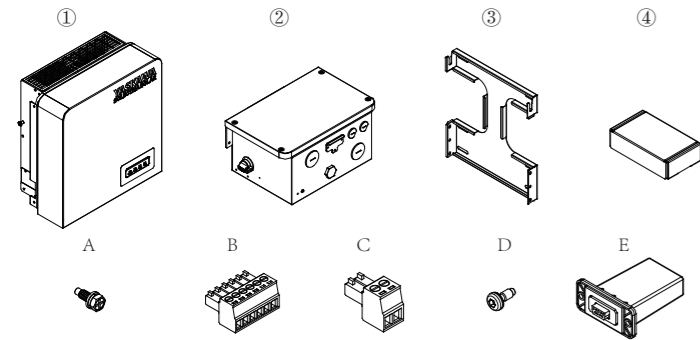
Important safety instructions

- WARNING:**
All the installation and wiring connections should be performed only by qualified technical personnel. Failure to follow these instructions and other relevant safety procedures may result in voiding of the warranty and/or damage to the inverter or other property!
- CAUTION:**
The total weight of the PVI25TL-480-R inverter and wiring box is approx. 28kg (61.7pounds). Ensure the mounting bracket is properly installed before hanging the inverter on the bracket.

Appearance and main item description



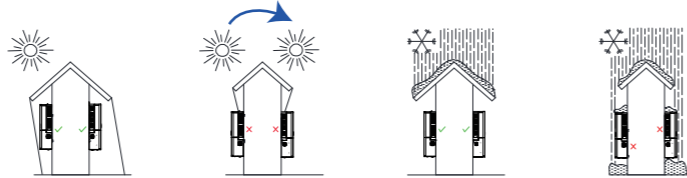
Check the following items are included in the packages



No.	Item	QTY	Note
①	Powerhead of the PV inverter	1	
②	Wiring box of the PV inverter	1	
③	Mounting brackets	1	Bracket upon which the PV inverter is hung and mounted
④	Accessory kit	1	Kit contains all necessary hardware and accessories for installation
A	M6 X18mm Phillips screw	12	4 for securing and bonding the wiring box to the main enclosure; 6 for securing the inverter to the mounting bracket; 1 for the External Ground connection,1 spare
B	6 pin PCB connector plug	1	For RS485 communication
C	2 pin PCB connector plug	1	For power supply
D	Hex socket screw	1	Spare (for wiring box cover)
E	Linkit Wi-Fi module	1	For monitoring

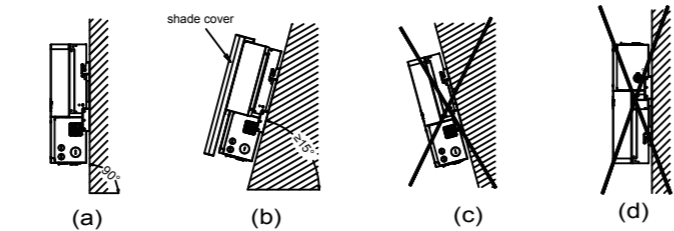
Mechanical installation

If the install environment allows, avoiding direct sunlight, rain and snow can extend the life of the inverter.

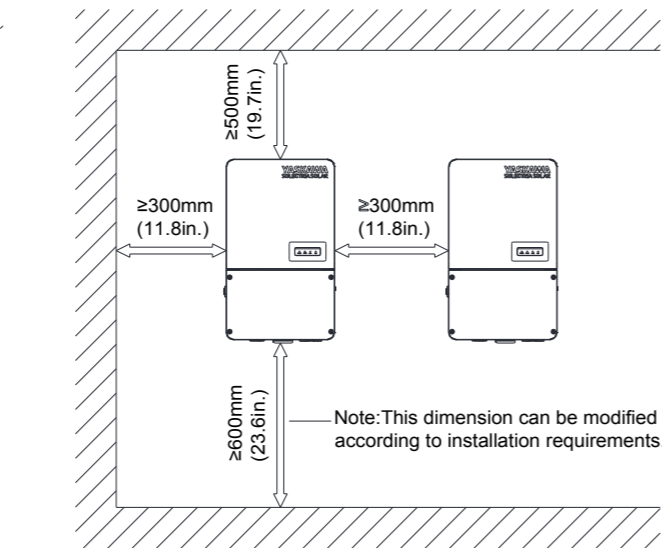


Ensure that the mounting structure (wall, rack, roof, etc) is suitable to support the weight of the inverter and is fireproof (nonflammable). Follow the mounting guidelines below:

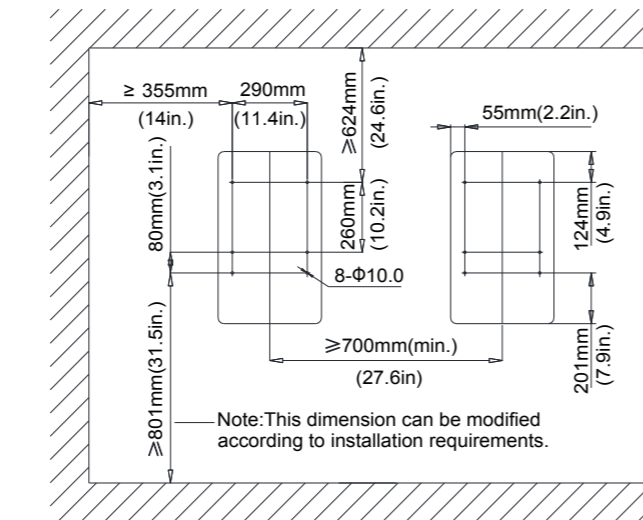
- (a) If the location permits, install the inverter vertically.
- (b) If the inverter cannot be mounted vertically, it can be tilted backward $\geq 15^\circ$ from horizontal. When the inverter is installed under direct sunlight, Solectria Shade Cover accessory is required to be installed.
- (c) Do not mount the inverter leaning forward.
- (d) Do not mount the inverter upside down.



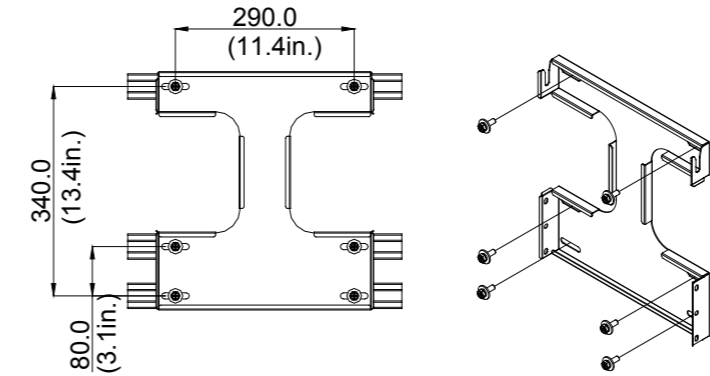
The spacing requirements are as follows:



Install the bracket

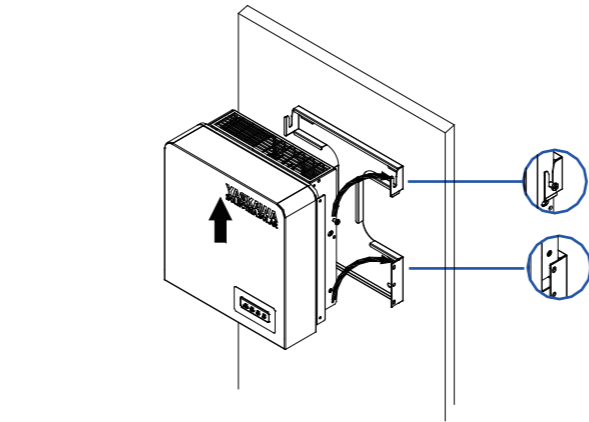


Secure the bracket to the metal frame firmly with the screws fastener. (screws are not supplied by manufacturer and the holes of the bracket are $\Phi 10\text{mm}$ (3/8 in.))



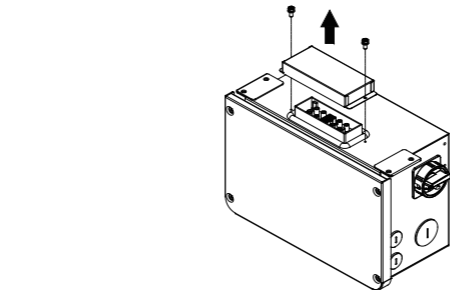
Install the main enclosure

Hang the inverter on the mounting bracket.

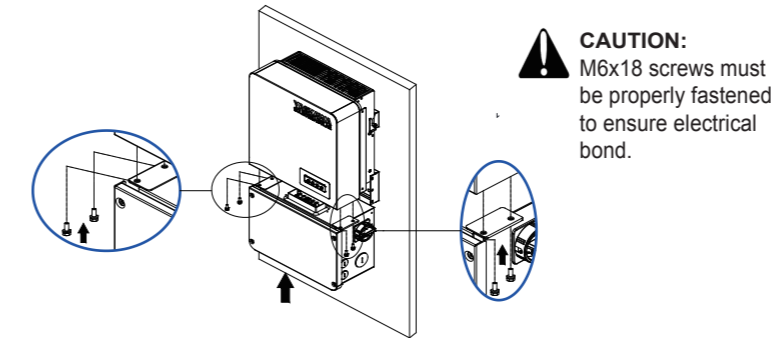


Install the wiring box

Remove screws securing the bulkhead cover at the top of the wiring box. Tool required: No.2 Phillips head screwdriver



Secure the wiring box to the main enclosure by using the M6x18 screws (4pcs) to fasten the wiring box. Tool required: No.3 Phillips head screwdriver, torque value of 4 Nm (35.4in-lbs)



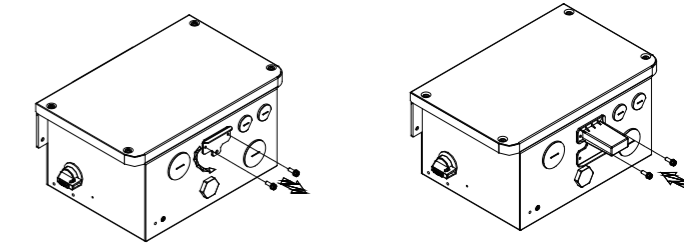
Attach the main enclosure and the wiring box to the mounting bracket with the M6x18 screws (6 pcs). This also provides an electrical bond between the powerhead and wirebox. Tool required: No.3 Phillips head screwdriver, torque value of 4N.m (35.4in-lbs)

Attach the bulkhead cover shown in figure to the left side of the wiring box. Tool required: No.2 Phillips head screwdriver, torque value of 1.6N.m (14.2in-lbs)

Optional - Install an anti-theft padlock when the installation is complete. The anti-theft padlock is used to prevent the inverter from being stolen when the equipment is installed outdoors. The inverter may be locked to the bracket.

Install the Wi-Fi module

Remove the two M4x10 fixing screws on the DB9 connector cover, rotate the DB9 connector cover to expose the connector, and install the Wi-Fi module with the two screws just removed. Pay attention to ensure that the seal remains waterproof. Tool required: No.2 Phillips head screwdriver, torque value of 1.6N.m (14.2in-lbs)



Cable specifications

DC Cable Specifications	
Terminal	Conductor
DC input(+ / -)	#14 - 8AWG (Cu only) fuse holder connections #8 - 2AWG (Cu only) Bypass terminal connections
AC and Ground Conductor specifications	
Position	Conductor
AC Output	L1/L2/L3/N: #8 - 2AWG (90 °C Cu) #6 - 2AWG (90°C Al)
PE	#6 - 4AWG (Cu)
RS485 communication	
RS485 communication	3x#22-18AWG communication cable (eg. Belden 3106A)

Tools required for cable termination

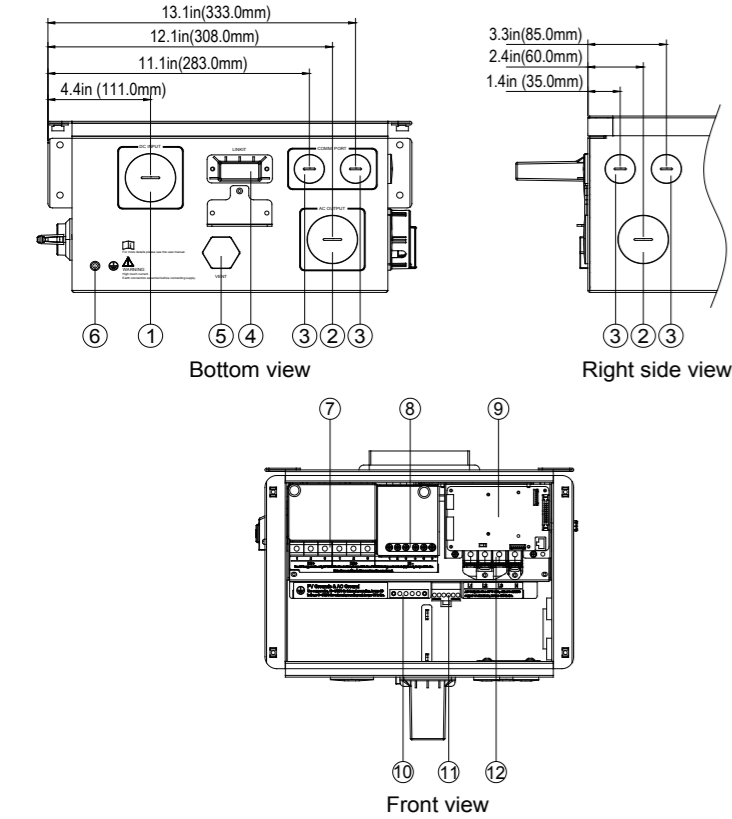
No.	Tools	Remark
1	#2 Phillips head screwdriver	DC Cable for wiring box
2	5mm socket head wrench	AC terminal block (L1~L3)
3	#3 Phillips head screwdriver	External grounding/bonding
4	#2 flat-head screwdriver	Internal grounding bar
5	1.5mm flat screwdriver	RS485 communication terminal
6	Diagonal pliers	Cut cable
7	Wire stripping pliers	Remove jacket
8	Crimping pliers	Crimp terminal

Torque value

DC Cable for wire-box	3N-m (26 lbf-in)
AC output terminal block	L1/L2/L3/N: 14 N-m (120 lbf-in)
Internal grounding bar	3 N-m (26 lbf-in) Ground terminal φ 6
External ground/bond point	5.6 N-m (50 lbf-in)
RS485 Communication	0.2 N-m (1.8 lbf-in)

Electric connection

CAUTION:
The inverters must be installed in accordance with the National Electric Code, NFPA 70, and any local codes or jurisdictions. After all conductors are installed, seal off conductor openings entering the wiring box with duct sealant.



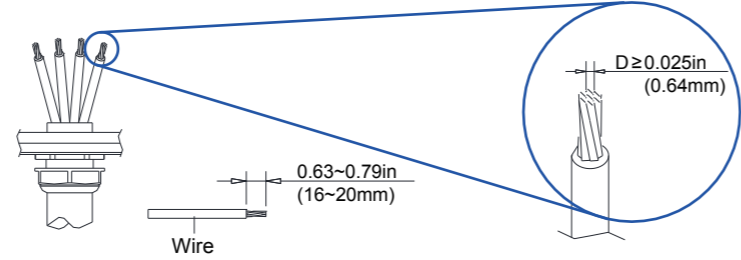
No.	Item
①	Knock-outs for DC input, (1) 1-1/2 inch Trade Size
②	Knock-outs for AC output, (2) 1-1/2 inch Trade Size
③	Knock-out for communication, (4) 3/4 inch Trade Size
④	Linkit Wi-Fi module port
⑤	Vent
⑥	External grounding/bonding (M6)
⑦	DC Input fuse holder/terminal (positive)
⑧	DC Input terminal (negative)
⑨	Communication board
⑩	Internal ground terminal
⑪	RSD transmmiter
⑫	AC output terminal block

Ground and AC output connection

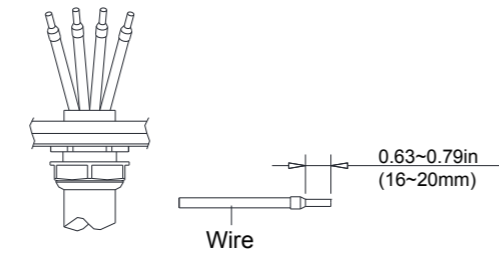
Use the 1-1/2 inch knockouts. Remove the liquid-tight hole plug from the right side or bottom of the AC input portion of the wiring box to install 1-1/2 inch Trade Size conduit and conduit fittings into the hole. Then route the cables through the conduit to the wiring box.

While it is required to have the PVI 25TL-480-R inverter connected to a grounded WYE configuration, running a physical neutral conductor is optional. The PE ground is ALWAYS required.

Copper conductors:
If the copper core diameter is 0.025in (0.64mm) or greater, it can be connected directly.



If the copper core diameter is smaller than 0.025in (0.64mm), use a wire ferrule (not included).

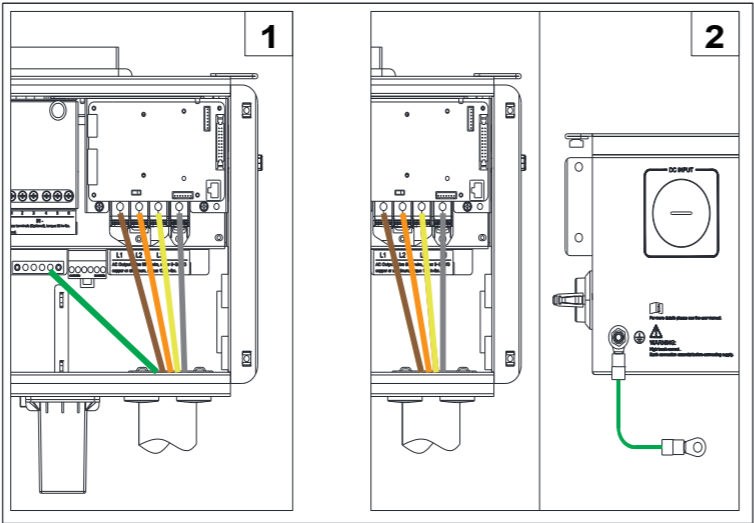


Aluminum conductors: when using aluminum conductors, Solectria recommends the following steps to prepare each conductor prior to landing and terminating to the AC terminal block:

- Remove outer insulating jacket from the conductor with care so as not to nick any of the strands.
- Using a wire brush, gently strip the top layer of the aluminum conductors
- After removing the oxidized layer immediately apply neutral grease (ie. Noalox) and connect the cable immediately to the terminal. Perform these steps on one cable at a time. If the process is stopped or delayed before applying the grease, and continue later- the conductor must be scraped again. It takes roughly 30-60 seconds for an oxidized layer to form on top of the conductors.

The inverter provides 1 grounding connection on the AC side and one bonding location.

- Grounding via the ground busbar. This is required for grounding the equipment by running the EGC with the ungrounded conductors.
- Bonding via the external grounding point. The external bonding connection is provided in case the inverter mount needs to be bonded to a metallic structure on which it is mounted.



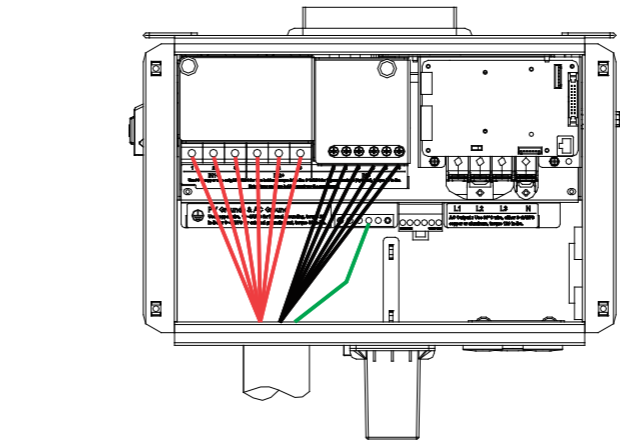
Either 3 poles circuit breaker may be selected as per the following recommend-ation:

Specification of AC breaker selection

Inverter	Min AC OCPD	Max AC OCPD
PVI25TL-480-R	39A	45A

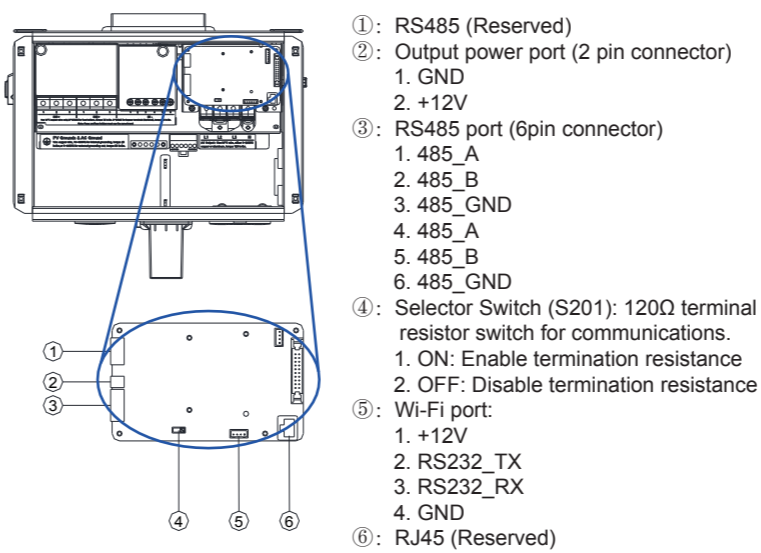
The PVI25TL-480-R inverter requires a 480V AC Wye Grounded service to operate. A transformer is necessary for alternate service voltage or configura-tion. Please see "Installation and Operation Manual" and "Interconnection Guidelines" documents for additional details.

Connect the DC cable

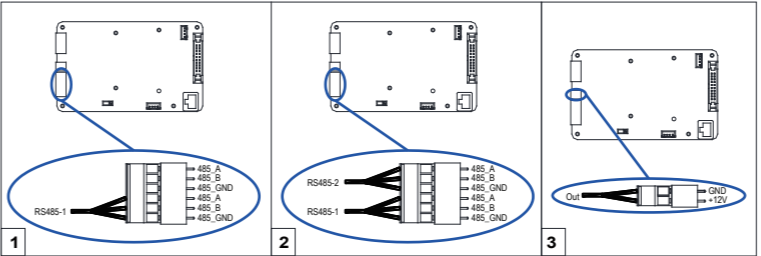


Use the 1-1/2 inch openings. Remove the factory installed liquid-tight hole plugs from the DC knockout hole in the wiring box and install 1-1/2 inch Trade Size conduit and conduit fittings. If smaller conduit is needed use proper weather-tight reducing bushings to ensure the wiring box maintains it's NEMA 4X rating. Confirm all fittings are properly tightened, and route the DC source circuit conductors through the conduit into the wiring box.

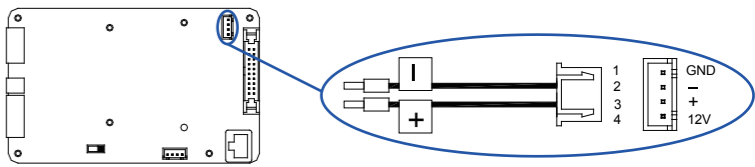
Communication connection (RS485)



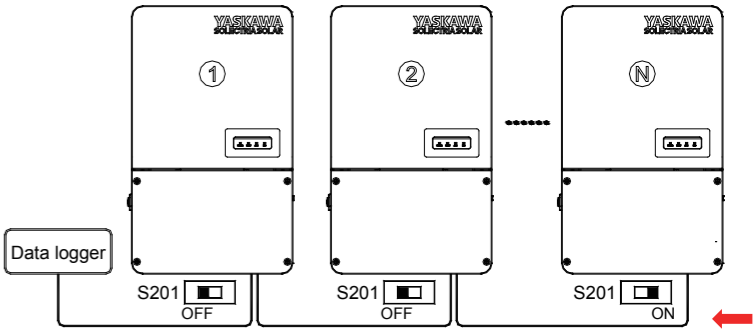
A shielded twisted-pair RS485 communication cable is recommended. Please see installation and operation manual for recommended cable types and install-ation best practices.



The connection of the rapid shutdown (RSD) transmitter is installed in the factory. The power supply is from a 4-pin connector on the communication board. If inverter is to be powered on for the first time without AC power, an external power supply is needed. See manual for more details.

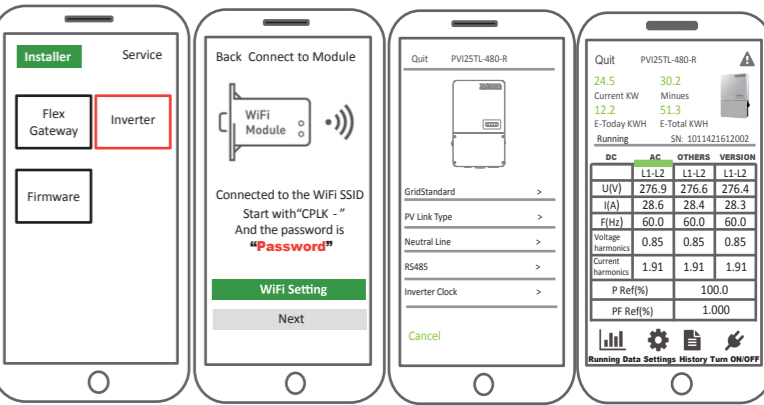


If there are multiple inverters in the RS485 network, the selector switch S201 of the last inverter in the daisy-chain should be in ON position to have the 120ohm terminal resistor enabled. The selector switch S201 of all other inverters should be in the OFF position to disable the terminal resistor.



App download and operating (Yaskawa connect)

The inverter settings are accessed through the **Yaskawa connect** application. Download the iOS version at Apple store or Android version in Google store named “Yaskawa connect”. (Support Android 4.1 and IOS 9.0 or later).



- Open the APP (Yaskawa connect)
- No-LCD Inverter**
- Wi-Fi Setting
- Choose the Wi-Fi (Named **CPLK-XXXXXXX** where “X” can be found on the Wi-Fi Module inserted into the side of the inverter)
- Input the password “**Password**”
- Setting the grid “**GridStandard, PV LinkType, Neutral Line, RS485 and Inverter Clock**”
- Operate normally

INSTRUCTION:
Please check with you local electricity supply company before selecting a grid standard. If the inverter is operated with a wrong grid standard, the electricity supply company may cancel the interconnection agreement.

When the device screen shows the normal operation status and the “RUN” light on the LED panel is illuminated, this is an indication that the grid connection and power generation are successful. If the inverter fails to operate normally, the “FAULT” light will illuminate and the fault information will show on the APP interface. Enter to “History” check the detail. Troubleshoot related issues and restart again. Please customer service if the problem persists at (978) 683-9700*2.

Download the complete user manual at: www.solectria.com